

REMARKS

Claims 1, 4 and new claims 17-20 are pending. Claims 2, 3, 5-16 have been canceled. Support for amendments to Claims 1 and 4 and new claims 17-20 in the published specification is as follows: Claim 1: [0043], [0045]; and Claim 4: grammatical; Claim 17: [0043]; Claim 18: [0025]; Claim 19: [0051]-[0052]; and Claim 20: claims 1, 4 and 18. No new matter has been introduced.

The specification has been amended to correct a typographical error in [0043] which is supported elsewhere in the same paragraph. No new matter has been added.

Claims 1, 3, 4, and 5 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 5, 6, and 3, respectively, of copending Application No. 10/562,007. (Office Action, Page 2)

The applicants understand the possibility of filing a Terminal Disclaimer should the copending application be granted first.

Claims 8, 9, and 13-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. (Office Action, Page 3)

Claims 8, 9 and 13-16 have been canceled making this rejection now moot.

Claims 9, 15, and 16 are also rejected because the claims contain the limitation "PC/ABS". It is unclear whether the punctuation "/" indicates "PC or ABS" -or- "PC and ABS". (Office Action, Page 3)

Claims 9, 15 and 16 have been canceled making this rejection now moot.

As for new claim 17, Applicant would like to bring the Examiner's attention to page 2, lines 23 the specification at p.2, lines 5 – 1 from the bottom. It reads:

This was confirmed when such a thermal shock test or thermal cycle test as will be described later was performed for resin-plated products using PC/ABS (polycarbonate/ABS) resin or ABS resin.

This indicates that PC/ABS means a polycarbonate/ABS blended resin – ***PC and ABS***.

It was also mentioned on p.13, line 10:

As the material of the resin molding W in the present invention there may be used any of all the materials used in the production of resin-plated parts, including ABS resin, PC/ABS resin (polycarbonate/AGS resin), ...

Further, in the same paragraph, at the bottom of page 13, lines 5-1 from the bottom, it is clearly stated that the resin molding W comprises "two or more different resins" and contains rubbery like substance.

Accordingly, it is clear from the disclosure of the specification that PC/ABS indicates PC and ABS. It is also clear that the punctuation "/" mean "and" throughout the specification.

Claims 1, 3-5, 8-9, and 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa JP 01-256575 (abstract) in view of Kawagishi et al US 4940608.
(Office Action, Page 4)

Claims 3, 5, 8-9 and 11-16 are canceled making the rejection with respect to these claims moot.

With regard to claim 1, the Office Action alleged Ogawa et al. as teaching the method of creating a resin molding comprising of ABS resin or PC resin and another crystalline resin, and Kawagishi as teaching the method of local electroless plating for plastics, in which the plastics product includes ABS resin, PC resin, or ABS/PC resin.

Applicants respectfully traverse the rejection for the reasons discussed below.

Ogawa et al. concerns a method of manufacturing a delustered thermoplastic resin molding. Ogawa et al states that the purpose of the invention is to provide a method of manufacturing a low-gloss thermoplastic resin composition having a delustered surface and pleasing appearance and a good impact resistance. Page 2, upper left column, lines 12-15 of the JP 01-256575. Ogawa et al neither discloses nor teaches *metal plating applicable to the resin* molding. Moreover, Ogawa et al neither discloses or teaches to *what portion the heat treatment is performed*.

Kawagishi et al concerns a local electroless plating process for plastics. Kawagishi et al does not disclose the resin plating method comprising the *partial heat-treatment*. Local

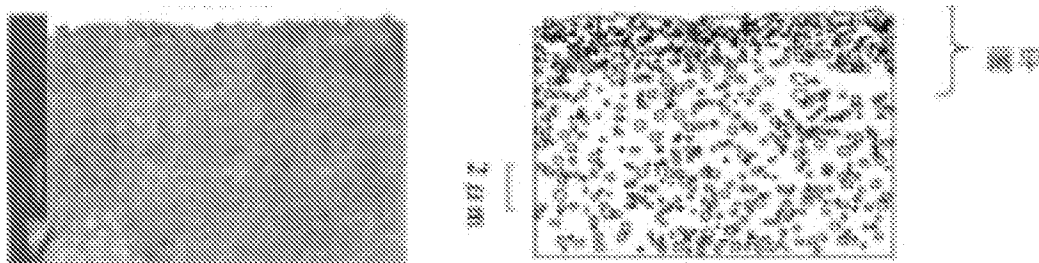
electroless plating of Kawagishi et al is totally different from the partial heat treatment of the resin molding of the claimed invention.

Neither Ogawa et al nor Kawagishi et al recognize the ***problem of peeling or floating of the metal plating film in the resin molding***. There is no motivation to perform the method as now claimed, even if the references are combined.

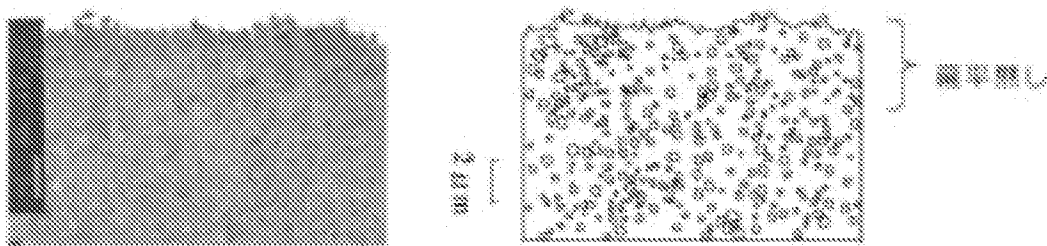


The difference between the claimed method and the prior art can be illustrated by the photographs and drawings below which show a cross-section view take along line A-A above.

TEM photograph and drawing of surface of product shown without heat treatment:



TEM photograph and drawing of surface of product shown with heat treatment:



The first set of figures show that under ***normal prior art heating conditions***, particles concentrate and ***create a layer near the surface of the resin***. ***The layer is then susceptible to peeling***. In contrast, the heating conditions of the claimed invention do not result in such particle concentration and as a result, ***no peelable layer is formed***.

The invention recited in claim 1 relates to a resin plating method with an added ***partial*** heat-treating process for plating a resin molding composed of a mixture of two or more different

resins in which a rubber component is dispersed. The method comprises a ***partial heat-treatment only to the parting line portion of the resin molding at a high temperature***. The temperature is within a range from the heat deformation temperature of the resin to the resin molding temperature. The method further comprises metal plating of the resin molding undergoing high-temperature partial heat treating. The high temperature heat treatment is performed only to a parting line portion which is apt to undergo peeling of a thin surface resin film. ***The heat treatment makes it possible to “suppress the occurrence of such an undesirable phenomenon as a metal plating film after resin plating peels together with the thin resin film,”*** page 9, line 2 from the bottom to page 10, line 1 of the specification.

Accordingly, the improved properties of less plating peeling achieved by the claimed invention cannot be attained by the combination of Ogawa et al with Kawagishi et al. Thus, it would not have been obvious to one of ordinary skill in the art of resin plating to use the plating method of Kawagishi et al after the molding and heating method taught by Ogawa et al.

As to claim 4, the office action stated as follows:

since the same process with the same resin is disclosed by the prior art, and heat treated at a temperature within the disclosed temperature range, it would be inherent that the rubber particles (from ABS) retain a circular shape of 2:3 or less in terms of a size ratio in longitudinal and transverse directions.

The Applicant respectfully disagree.

As stated above, neither Ogawa et al nor Kawagishi et al nor combination thereof discloses or suggests the same process of claim 1. Contrary to the heat treatment in Ogawa et al, which the Office Action admitted that it is teaching heat treating the entire mold (line 4 from the bottom of page 4 if the Office Action mailed February 2, 2009), the method in claim 1 comprises a ***partial heat-treatment only to the parting line portion of the resin molding at a high temperature***. The applicant of the present application recognized a problem of the method in which the whole of a resin molding is subjected to heat treatment. Specifically, second paragraph in page 7 of the specification addressed the problem, “that concaves and convexes or deformation may occur in the resin molding because the whole of the resin molding is heated.” The partial heat-treatment of the claimed method is applied only to a parting portion in a short

time without heating an uneven portion of the resin molding or a portion of the resin molding which portion is apt to be deformed,” lines 2-5 on page 10 of the specification.

Based on the method differences which result in a completely different structure, as empirically shown, it is respectfully requested that the rejection be reconsidered and withdrawn.

Claims 1, 3-5, 8-9, and 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kayano et al JP 07-118416. (Office Action, Page 5)

Claims 3, 5, 8-9 and 11-16 are canceled making the rejection with respect to these claims moot.

The Office Action stated as follows:

Kayano teaches the process of treating a molding, a surface treatment step which heats the surface in the range from room temperature to 350°C [0032]. Kayano further teaches that ABS is a useful additive resin in the composition [0041].

The applicants respectfully disagree. Kayano discloses a surface treatment method for molding of an aromatic polymer by contacting the aromatic polymer having ketone bonds in the main chain with a primary amine compound, with the presence or absence of solvent [0007]. Specifically, paragraph [0031] stated that the surface treatment of the invention of Kayano et al is performed either by applying the primary amine compound or solution in which the primary amine is dissolved in the solvent, onto the surface of the molding, or by immersing the molding into the primary amine compound or the solution thereof. The heat treatment mentioned in the Office Action as [0032] follows the paragraph [0031] and how the surface treatment is performed is described in working examples. Example 1 described that the aromatic polymer molding (polyetherether ketone film) is immersed in a primary amine solution (4,4'-diaminodiphenylether in sulfolane) at 150 °C for 30 minutes, Example 2 described that aniline (primary amine compound) was applied to a copolymer film of polyetherketone and polycyanoarylether and treated at 170 °C for 10 minutes, and Example 3 described that hydrazine monohydrate (primary amine compound) was applied to a polyetherketone film (resin molding) and treated at 100 °C for 10 minutes (Example 3). ***Thus, the surface treatment of Kayano et al needs both contacting with primary amine compound either by immersing or***

applying onto the resin molding and heat treatment. Both steps are inseparable and otherwise Kayano et al cannot achieve the desired surface property.

Moreover, if the resin molding of the present invention exposed to the same environment as Kayano disclosed, such as immersed in a solution at 150 °C for 30 minutes or treated at 170 °C for 10 minutes, deformation will occur to the resin molding of the present invention.

Accordingly, the improved properties of less plating peeling achieved by the claimed invention cannot be attained by the disclosure of Kayano et al. ***Further, applying Kayano et al would destroy desired property of the molding of the present invention.*** Thus, it would not have been obvious to one of ordinary skill in the art to apply the surface treatment of Kayano et al to the method claimed in claim 1.

It is respectfully requested that the rejection be reconsidered and withdrawn.

In view of the above amendments, applicant believes the pending application is in condition for allowance.

The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 04-1105.

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Customer No. 21874

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